



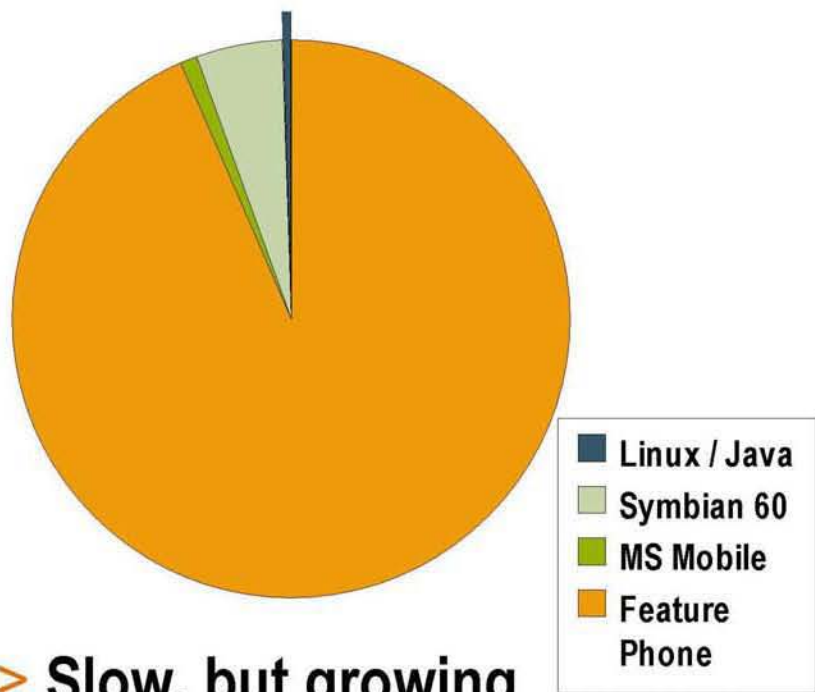
# **Project Armstrong: Business Model**

**Client Systems Group  
February 2006**

Sun  
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Need-to-know only

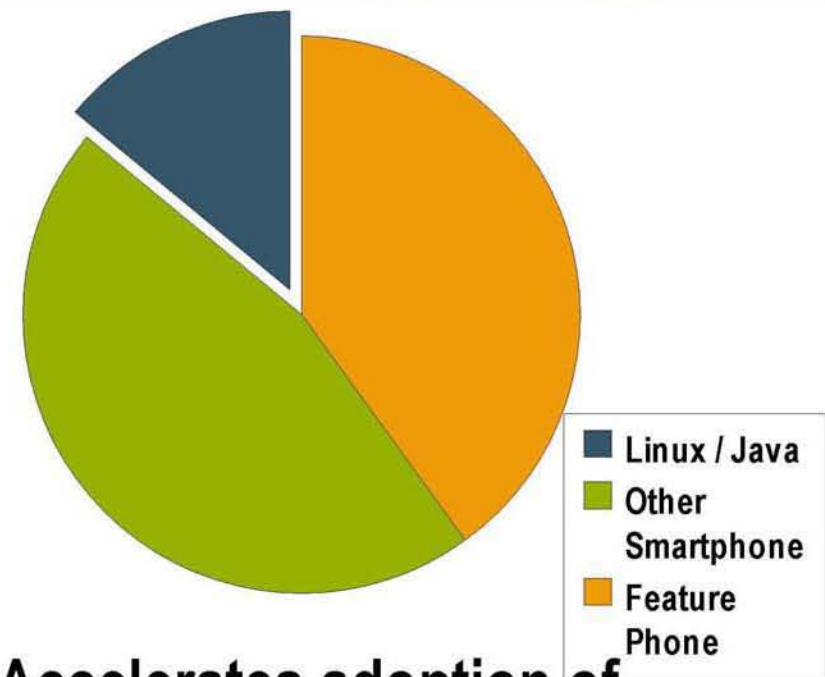
# MSFT and Sun/Google move to commoditize smartphone stack – market shift accelerates

## Current State



- > Slow, but growing Smartphone adoption
- > Symbian the leader, but vulnerable

## With MSFT move and Sun/ Google Entry



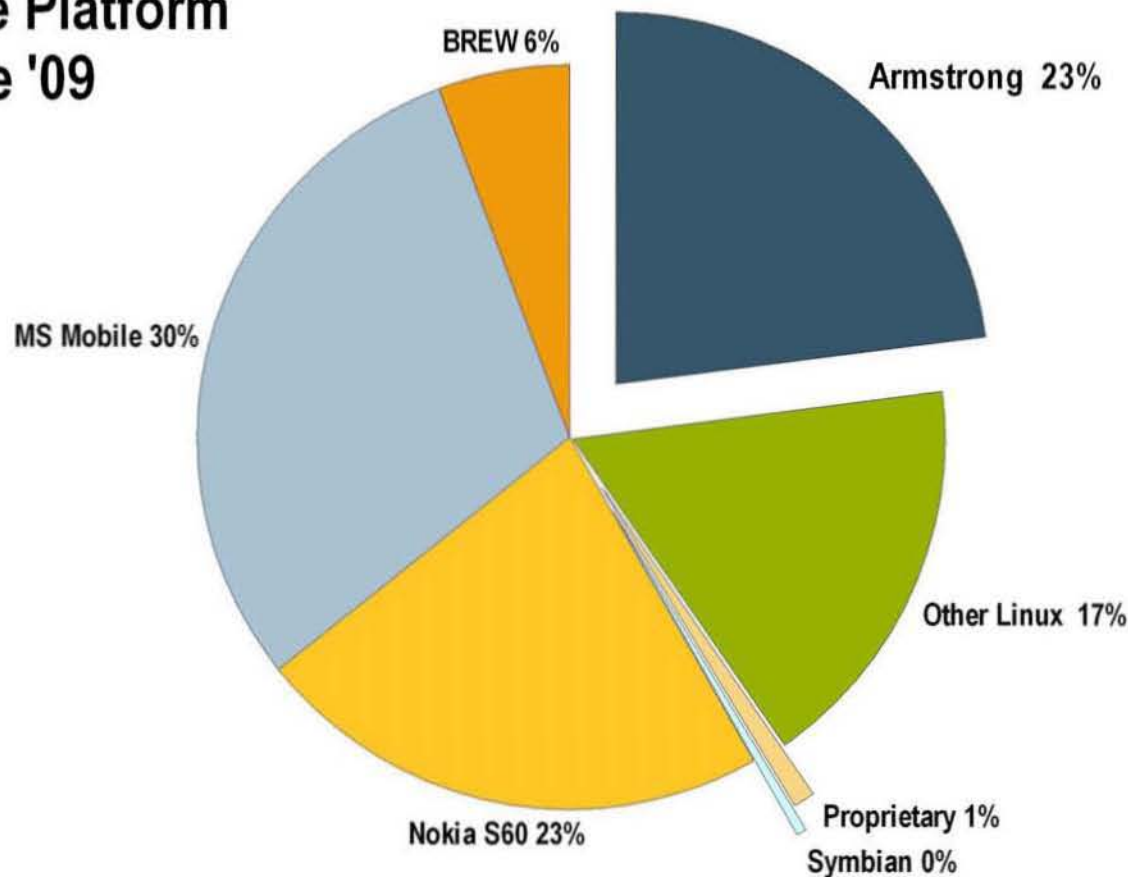
- > Accelerates adoption of Smartphone platform and services to the mass market
- > Grows the Linux/Java share

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# Sun Takes Share From Competing Platforms

- Combats MSFT looming dominance

## Smartphone Platform Marketshare '09

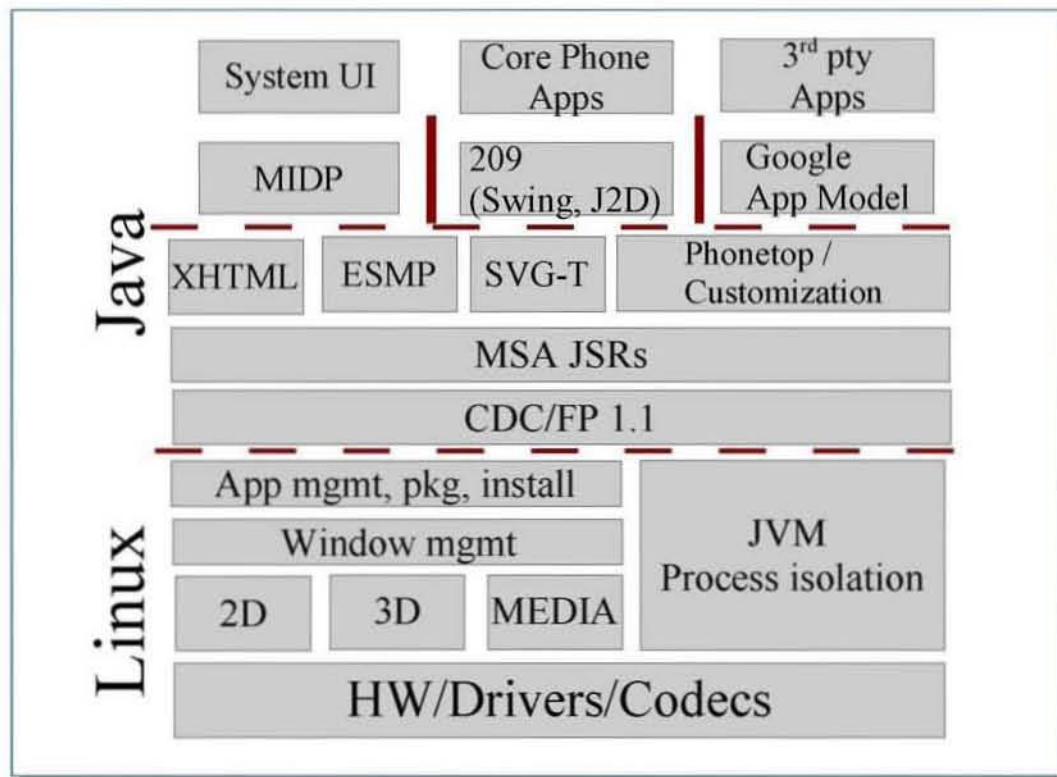




# Sun and Google Collaborate on Open Source Smartphone Stack

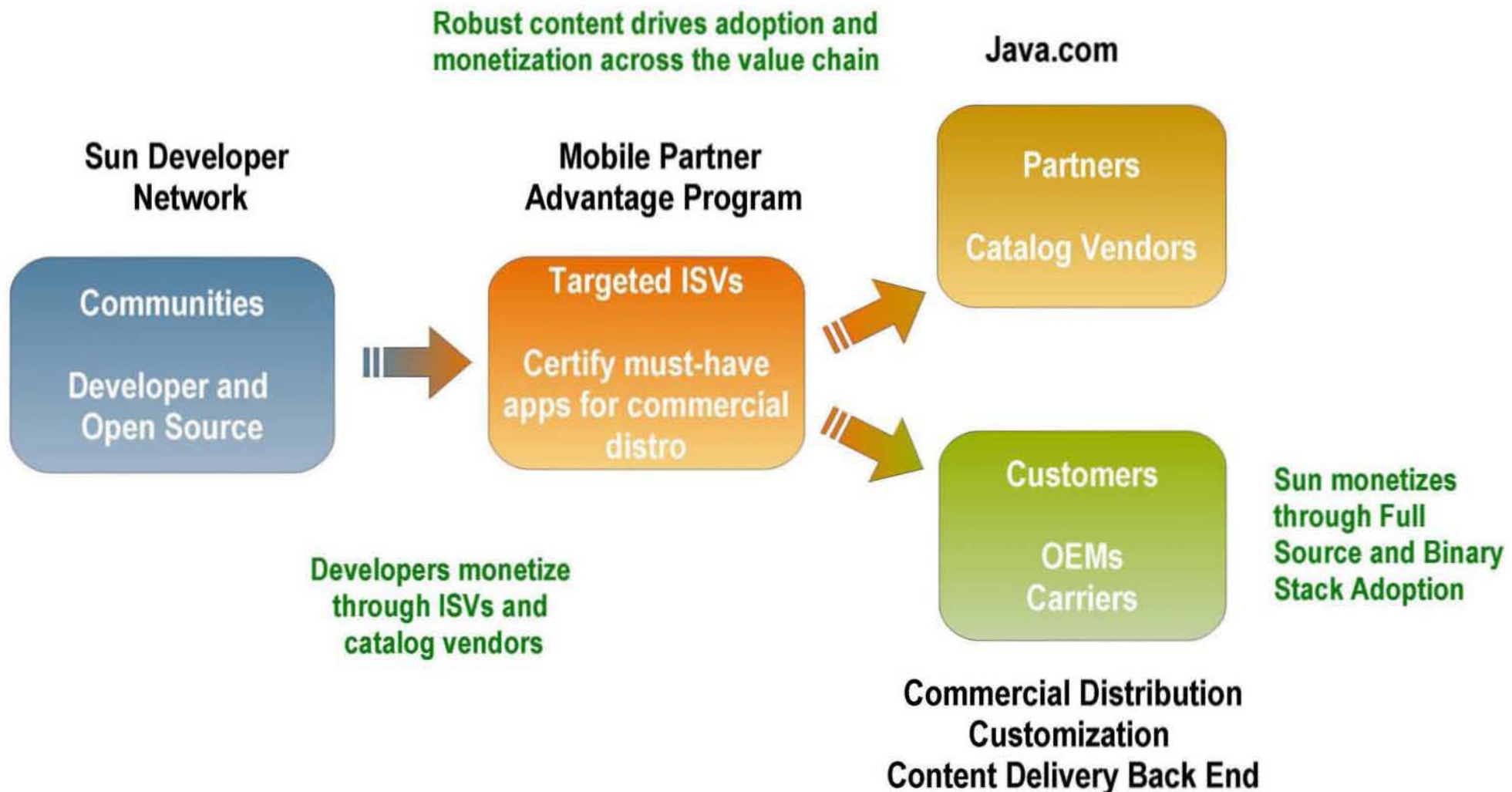
- Full stack based on Java-Linux
  - > Release 1.0 ready for consumers by xmas '07
  - > Code release to the community in concert with release of Sun commercial distro (Java Mobile Platform)
- Currently negotiating what's in/out from partnership perspective
  - > Written agreement on what Google and Sun each contribute is critical to Sun's ability to monetize the commercial distro
- Sun position is that apps are certified to the commercial distro only

# Java/Linux Mobile Platform Architecture



- Full stack Java/Linux implementation:
  - Supported on multiple hardware platforms
  - Integrated Java/XML/Scripting platform
- Allows for OEM and Carrier customization of UI and Services

# Sun Programs Designed to Funnel Developers to Commercial Distro Where We Monetize



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# Sun Commercial Distro Adoption Strategy

- GA of Sun commercial distro released before or with open source stack
  - > Developers want and need: OSD compliant license, tools, Developer Programs, path to monetization
- Enroll ISVs with must-have content; certification of apps to commercial stack drives adoption
  - > Identify key ISVs (aligned with Carrier target); provide early simulator code, test suites
  - > Certification and app branding
- Drive market tippers to deploy Sun commercial distro
  - > Carrier targets (Sprint, CMCC, Vodafone) help to drive OEM targets (Samsung, LG, BenQ)
  - > Chip suppliers (EMP, Intel, TI) – prioritize proactive porting

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# JMP Developer to Revenue Funnel

	Developers	ISVs	OEMs/Silicon Vendors	Catalog Vendors	Carriers(subs)
<b>Key Program(s) and Products</b>	SDN	Mobile Partner Advantage Program	JMP Commercial Distribution	java.com	Customized JMP, CDS->JES
<b>Services</b>					
	Leverage existing SDN web/program infrastructure	Certification Program and Tools – Java Compatible?	Sun Value added features	Leverage, extend java.com retailing	Prof services to customize JMP
	Mobile developer registration	Logo granting	3 <sup>rd</sup> Party components Integrated	Desktop and mobile portals	Prof services to customize content dist.(CDS)
	Tutorials, Sample apps, webcasts, blogs, white papers	Technical Assistance with stack	UI Design		JES
	Integrate NB, ship with Sun distro	Access to partner community	Customization, porting, testing		
	JavaOne JMP track	GTM support	Device Testing Tools		
		Access to java.com, Global Support marketing to carriers and distribution			

Possible monetization of ISV test and certification

Platform Adoption Sun monetizes source and binary subscription

Monetize content thru java.com Customization, Sun monetizes Through ES

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# Sun Monetizes Through Deployment

## Java Branding

### Sun Customization, Porting, Testing, and Integration

#### Sun's Commercial Distribution

#### Open Source Distribution

Complete Sun-Google  
Java/Linux Implementation

Source Code for full  
customization

Integrated by Sun & Google

Contribution from  
community

Sun value added features

Qualified & tested on  
various HW

Global support and  
maintenance

Technical Consultation and  
Documentation

Commercial 3<sup>rd</sup> parties  
components integrated

Indemnification

Source and/or binaries targeted  
to customer specific platforms

OS, chip-set, native drivers, etc.

3<sup>rd</sup> party software components

Device quality testing tools and  
services

Porting services

Mobile Platform Customization

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## Per unit Pricing and Sun Share (FY09)

Offering	Customer price (\$/unit)	Sun Share (\$/unit)	Volume (M)	Sun Revenue (\$M)
Open Source	0	0	87	0
Customized Source	6	4	73	292
Binary	5	3	39.5	118.5
Commercial Source	1.5	1.5	35	52.5
Total			234.5	463

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# JMP Business Case and ROI – includes mktg/isv/OS

(\$M)	FY06	FY07	FY08	FY09	Cumulative
Revenue	0.0	1.4	153.1	462.6	617.0
COGS	0.5	1.1	23.7	34.6	59.9
Gross Margin	-0.5	0.3	129.4	428.0	557.2
CSG OPEX	7.1	18.3	21.7	21.7	68.8
OOPEX	0.55	5.2	5.8	5.8	17.35
ROI Ratio	-0.1	0.0	4.7	15.6	6.5

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# Investment Ramp - R&D

	FY06	FY07	FY08	FY09
<b>JMP</b>				
-Total Average Head Count Required	55	134	156	157
- CSG Funded Average Head Count	49	71	75	75
<b>Incremental Average Head Count Req</b>	6	64	81	82
<b>JMP</b>				
- Total \$s Required	\$7,181	\$18,299	\$21,532	\$21,692
- CSG Funded \$s	\$6,452	\$9,892	\$10,612	\$10,612
<b>Incremental \$s Required</b>	\$729	\$8,407	\$10,920	\$11,080

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# BACKUP

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CONFIDENTIAL

OAGOOGL0100166886

# ISV priorities

## Ranked by Service Provider Revenue

- **Communications** **48%**
  - > SMS, Email, IM, Rich Messaging,
  - > Photo Messaging, Video Messaging
- **Personalization** **8%**
  - > Ringtones, Graphics, Voice Greetings
- **Entertainment** **28%**
  - > Games, Adult, Sport, Music/Media, Other
- **Information** **13%**
  - > Leisure Info, Travel & Transport info,
  - > Directory, Financial, Other
- **Corp Connect** **4%**

*Source: Strategy Analytics, Wireless Internet Applications (WIA) Strategic Advisory Service, Worldwide Cellular Data Forecasts, Published: August 2004*

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Market	Target Apps	ISV Partner	Channel Partner	Backend Req'd
Consumer	IM/MM IM			Y
	Video send/receive			Y
	Push info (sports, movies)			Y
	Social Surfing	My space, facebook, youtube		Y
	Photo (send/receive)	Kodak		Y
	TV Viewing			Y
	Itunes (audio/video)			Y
	Games – graphic rich	EA, Digital Chocolate		
	Games – multi-player	EA, Digital Chocolate		
Enterprise	Push email	RIM, Notify, SGD		
	Calendar	OL connect SGD		
	Office docs			
	Sms			
	Video conferencing			

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# Business Model Strategy

- Sun's objective is to sell Binary Subscriptions to Device Manufacturers
  - > Sun Value
    - > Quicker to market, trusted delivery partner
    - > Demand generating user interface and features (Partnered w/ Armstrong)
    - > Custom differentiation
    - > Recue the cost, risk and uncertainty of building your own
    - > Sun brokers 3<sup>rd</sup> party IP and guarantees performance, stability, delivery
    - > 1/3<sup>rd</sup> of the cost of proprietary implementations
  - > Source Subscription designed to enable an upsell, protect value of Binary

# Custom Source Subscription

- Customer Segment:
  - > Top OEM's
  - > OEM drives relationship with carrier for specifications

## Benefits

Commercial Custom Source	-Complete productized source tested and certified against the device <b>to the OEM's specifications</b>
2 Updates per Year	-Subscription includes 2 updates containing all non-critical bug fixes and new features
8x5 Binary Support	-Escalations and updates for critical bugs or security patches -Knowledge base -Online issue submission and tracking
Simplified 3 <sup>rd</sup> Party Licensing	-Custom subscription may include certified 3 <sup>rd</sup> party applications and content services -Sun will handle front line support for all 3 <sup>rd</sup> party applications

## Pricing

- \$6.00 / device Annual Subscription
- (Assumes \$2.00 in 3<sup>rd</sup> Party Royalty)
- Cap likely (around 50M???)

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# Custom Binary Subscription

- Customer Segment:
  - > ODM's
  - > Joint Carrier / ODM relationship drives specs for Custom Binary

## Benefits

Commercial Custom Binary	-Complete productized binary tested and certified against the device
2 Updates per Year	-Subscription includes 2 updates containing all non-critical bug fixes and new features
8x5 Binary Support	-Escalations and updates for critical bugs or security patches -Knowledge base -Online issue submission and tracking
Simplified 3 <sup>rd</sup> Party Licensing	-Custom subscription may include certified 3 <sup>rd</sup> party applications and content services -Sun will handle front line support for all 3 <sup>rd</sup> party applications

## Pricing

- \$5.00 / device Annual Subscription
- (Assumes \$2.00 in 3<sup>rd</sup> Party Royalty)
- Cap likely (around 50M???)

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# Commercial Source Subscription

- Customer Segment:
  - > No preferred target
  - > Defensive position to support binary value
  - > Binary code may be differentiated

## Benefits

Access to Commercial Source Distribution	-Includes all upgrades and updates to the tested and certified commercial distribution source code
24/7 access to commercial support portal	-Right to file challenges and escalations against any tests included in the TCK with standard support response times
Assigned technical support via phone/email 8x5	-Knowledge base -Online issue submission and tracking -Sun bug database access
Assigned Business Support via phone/email 8x5	-B-Annual Senior Management Summits -Monthly Account Reviews by Java Licensee Engineering

## Pricing

- \$1.50 / device (AnnualSubscription)
- No Cap

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# TCK Subscription

- Customer Segment:
  - > Commercial Vendors taking Armstrong Open Source
  - > And, Commercial vendors implementing Armstrong on other OS's
  - > Ex. Nokia, LG, Channels

## Benefits

Upgrades and Updates to the relevant TCKs	Access to the most comprehensive Technology Compatibility Kit in the industry
Test Challenges	Right to file challenges and escalations against any tests included in the TCK with standard support response times

## Restrictions

- No Code Support
- No Access to Commercial Dist.

## Pricing

- Tiered Pricing (~\$.25) /device
- \$5M cap (Nokia Motorola?)



# Custom Value-Add Examples

- Operator
  - > Branding and User Interface Customization
  - > Prepackaged Applications
  - > Certified Application Brokerage (Java.com)
- OEM
  - > Device Specific Customization
  - > Porting and Testing
- Content
  - > Certified Content Brokerage

## Pricing

- NRE
- Assumed Binary Subscription

# Revenue Assumptions

- Timing
  - > Model assumes Armstrong stack starts gaining traction starting FY08
- Market Size
  - > Visiongain reports
  - > Strategy Analytics reports
  - > Ovum reports (Share)
- Model assumes different pricing sensitivity, market share cannibalization, Smartphone adoption rate and key player dynamics under different licensing models.

# Sun-Google to Deliver Smartphone Technology at Consumer Prices

- Google responsible for Linux and resident applications
  - > UI Design
  - > Danger alums, Acquiring assets for full stack
  - > Negotiating partnerships with chipset vendors required for radio functionality
- Sun responsible for the Java implementation
  - > Robust developer tools and developer community
- Sun is the sales/distribution channel for commercial stack
  - > Leverage the Google investment: access to Google bits at contract signing enables TTM advantage
  - > Non-exclusive PS and support provider

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# Licensing

- Current status:
  - > CDDL or BSD with patent non-assert are acceptable to G
  - > Linking patent non-assert to compatibility is non-starter for G
  - > Compatibility requirements likely not acceptable to OSD
- G position
  - > Compatibility requirements will not fly in the Open Source community

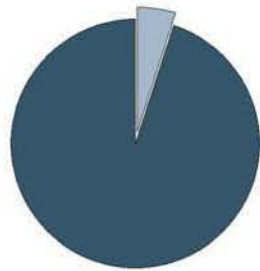
# Building An Open Market w/ IP Protection

LOW

Execution Pressure

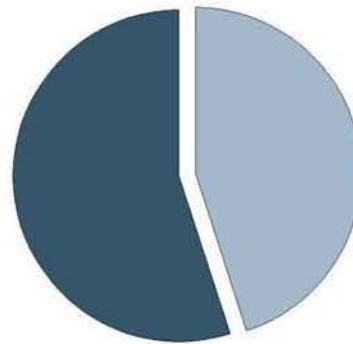
HIGH

## GPL License



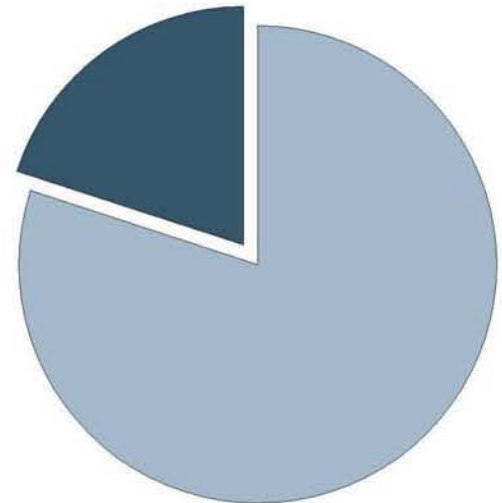
- > Low Price Pressure
- > Barrier to Entry
- > Sun Perceived Proprietary
- > Protected from fragmentation

## CDDL License



- > Mod. Price Pressure
- > Low Barrier to Entry
- > Sun Perceived Open
- > Protected from fragmentation

## Apache License



- > High Price Pressure
- > Low Barrier to Entry
- > Sun Perceived Open
- > Fragmentation Likely

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# Issues

- Branding
  - > Sun or Java Derivative Branding to differentiate from generic Java
  - > Branding could be withheld from TCK
- Source Subscription for non-wireless
  - > Different pricing / support requirements
- Testing